

Former Black Leaf Chemical Cleanup of Contaminated Soil

Department for Environmental Protection Division of Waste Management

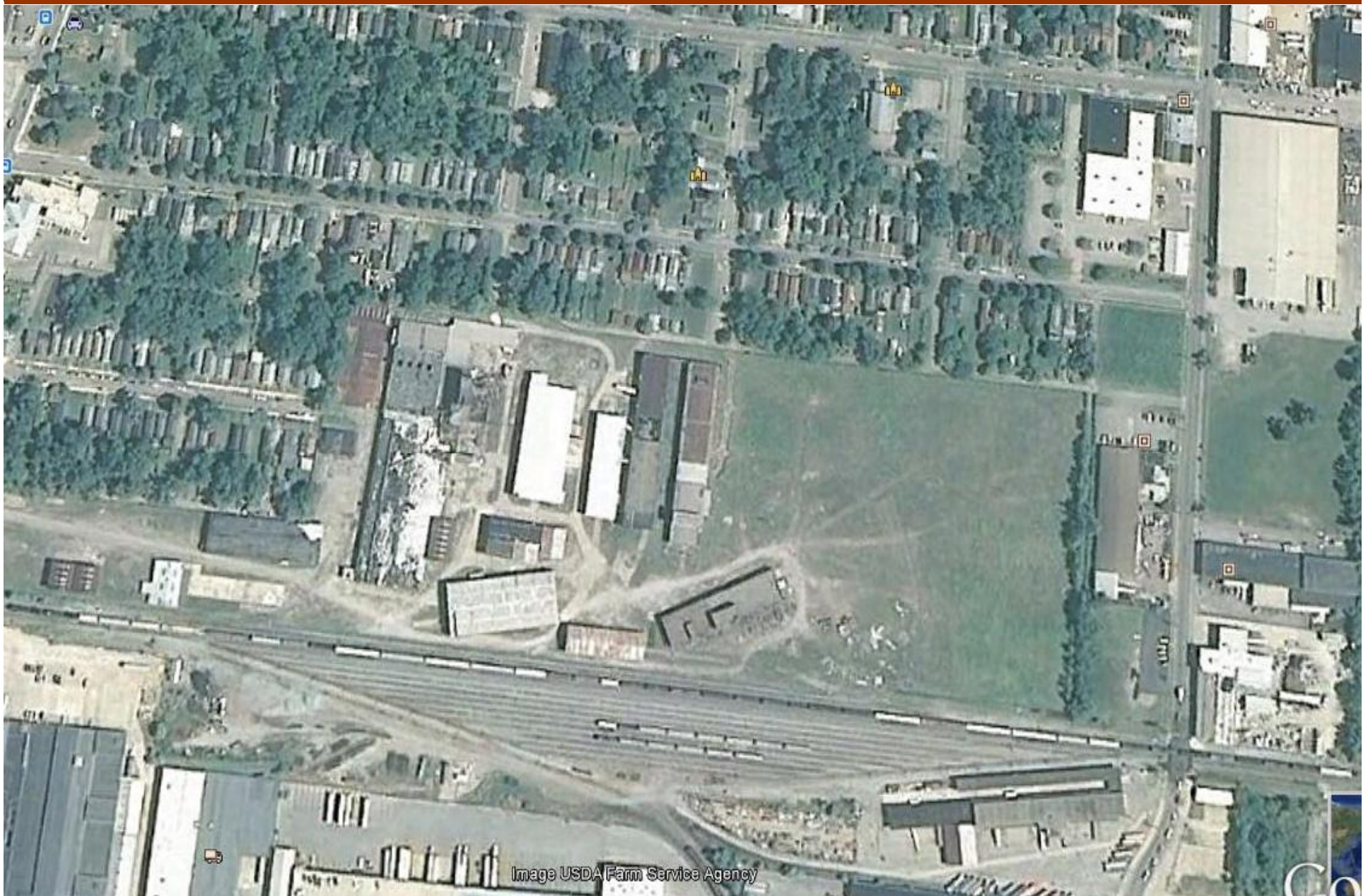
June 27, 2013



To Protect and Enhance Kentucky's Environment

Kentucky
UNBRIDLED SPIRIT™

Former Black Leaf Property and Surrounding Areas



Brief History of the Former Black Leaf Property

- The property consists of 29 acres located near the intersection of Dixie Highway and Wilson Avenue in Louisville.

The eastern portion of the property was used for the manufacturing of pesticides from 1920 to 1959.

The western portion of the of the property was operated as cooperage (barrel manufacturer) for a number of years.

- The property was purchased in 2001 but has been unused since that time.



Division of Waste Management



Aerial of Former Black Leaf Property - 1992



Sampling on Former Black Leaf Chemical Property

- In October, 2010, soil samples were collected on the Former Black Leaf Chemical property. Also, some samples were collected outside the perimeter fence of the facility.

The samples were analyzed for a long list of pesticides, volatiles, semi-volatiles and metals.

Pesticides, polycyclic aromatic hydrocarbons (PAHs), lead and arsenic were detected at levels of concern in soil samples collected at the property.



Division of Waste Management



Off Site Sampling Adjacent to the Former Black Leaf Chemical- Sample Data

- Because of a concern that contaminants may have been transported off the property into residential areas to the north and west, EPA and KDEP collected samples from residential yards that are located directly to the north and west of the site.

Shallow soil samples were collected in February and November of 2012. Samples were collected from a total of 69 properties. There were several properties where access to sample was not granted.

On June 18, KDEP collected shallow soil samples from an additional eight (8) residential yards along the south side of Wilson and St. Louis Avenues.

- The samples collected in the residential yards were analyzed for the same contaminants that were found at a level of concern on the Former Black Leaf Chemical property.



Division of Waste Management



Planned Actions

- Contaminants were detected in each of the residential yards at levels that are higher than Kentucky's residential screening levels.

The residential screening levels are developed by the USEPA using conservative exposure assumptions through inhalation (breathing), ingestion (swallowing), and skin contact.

Concentrations below these screening levels are considered to be very low risk.

- As a result, both KDEP and EPA are planning to cleanup soil in each of the yards that were sampled, if access is granted.



Division of Waste Management



Runoff Control Measures

- Pesticides, PAHs, lead and arsenic by their nature tightly bind to soil particles.
- Therefore, in 2010, EPA constructed some controls to prevent the transport of sediment off the site to the residential areas to the north and west.

The controls include rock check dams, concrete barriers, silt fencing and sediment basins.

The purpose of these controls is to slow runoff down to allow for the sediment to settle out of the water before it goes off-site.

These controls will prevent recontamination of the residential yards due to runoff from the site.



Runoff Control Measures



Division of Waste Management



Runoff Control Measures



Division of Waste Management



Pesticides

- Several pesticides were detected on the property and they were highest in the areas surrounding the pesticide manufacturing building including DDD, DDE, DDT, Aldrin, Lindane, and Dieldrin.
- Pesticides were detected in soil at fourteen (14) properties at concentrations that need to be cleaned up. Pesticides are associated with past activities at the Former Black Leaf property.

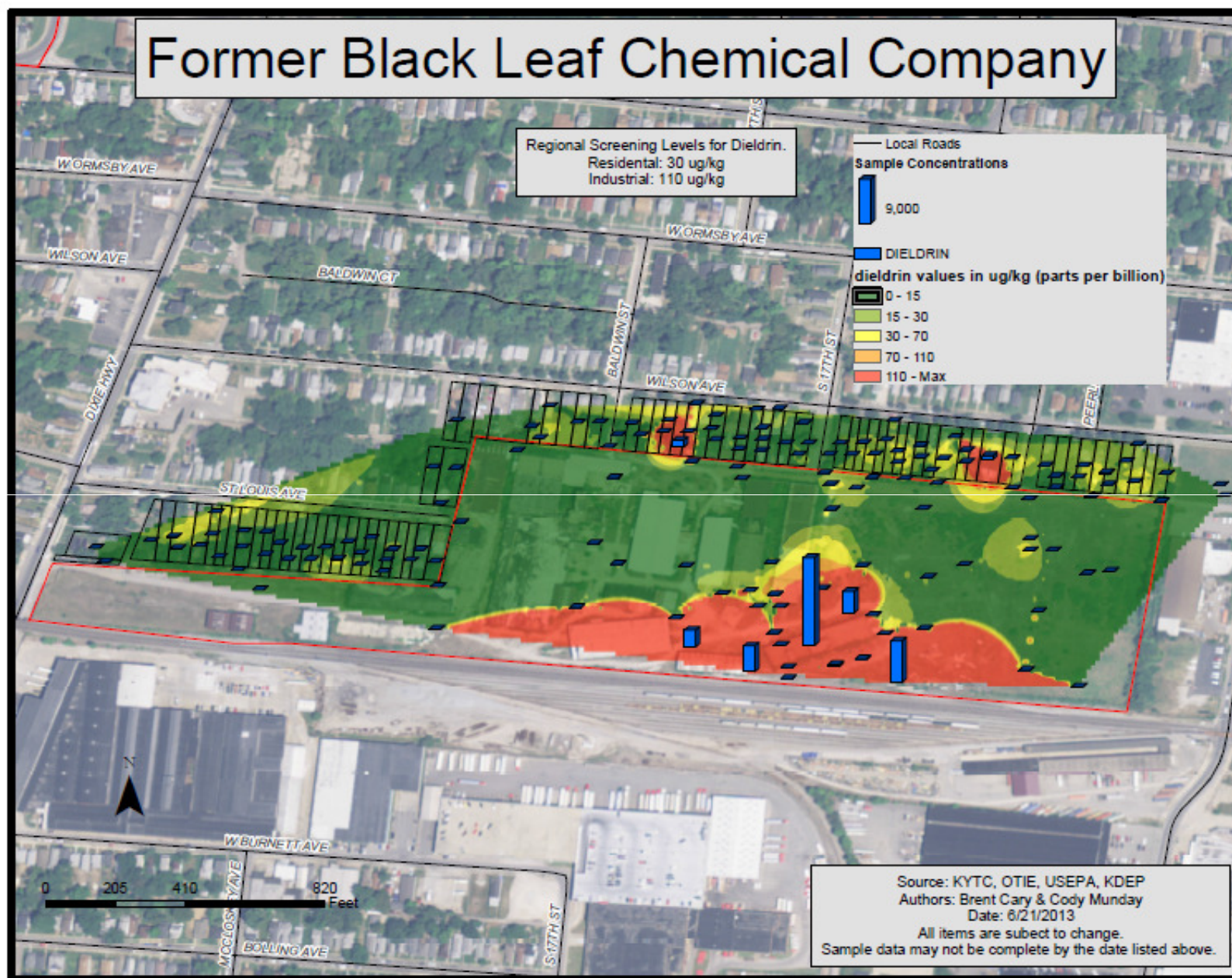
The pesticide contamination found in the residential yards was less than the pesticide levels found on the Former Black Leaf Chemical property.



Division of Waste Management



Former Black Leaf Chemical Company



Former Black Leaf Chemical Company

Regional Screening Levels for DDT.
Residential: 1700 mg/kg
Industrial: 7000 mg/kg

Local Roads

Sample Concentrations

190,000

DDT

DDT values in ug/kg (parts per billion)

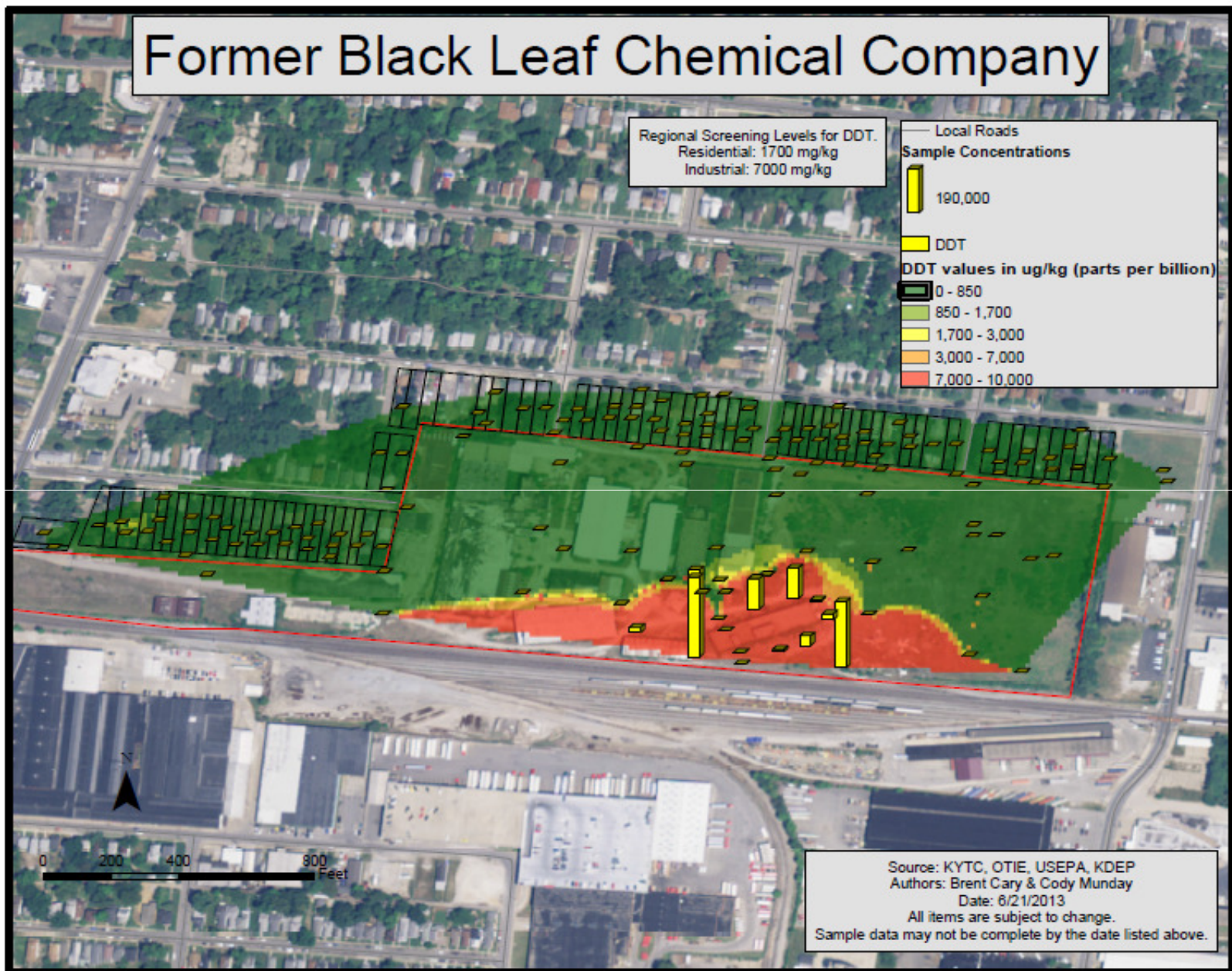
0 - 850

850 - 1,700

1,700 - 3,000

3,000 - 7,000

7,000 - 10,000



Source: KYTC, OTIE, USEPA, KDEP

Authors: Brent Cary & Cody Munday

Date: 6/21/2013

All items are subject to change.

Sample data may not be complete by the date listed above.

Former Black Leaf Chemical Company



Source: KGN_USER\ESRI
For: KDEP
Author: Brent Cary
Date: 6/17/2013
All items subject to change

0 250 500 1,000 Feet

PAH's

- PAHs found on site may be related to the manufacturing history at the property. There are other sources in the area.

PAHs, in general, are widespread environmental pollutants and are formed from both natural and man-caused sources.

Major man-caused sources include the burning of coal, coke production, automobile emissions, commercial incinerators, wood fueled boilers and railroads.

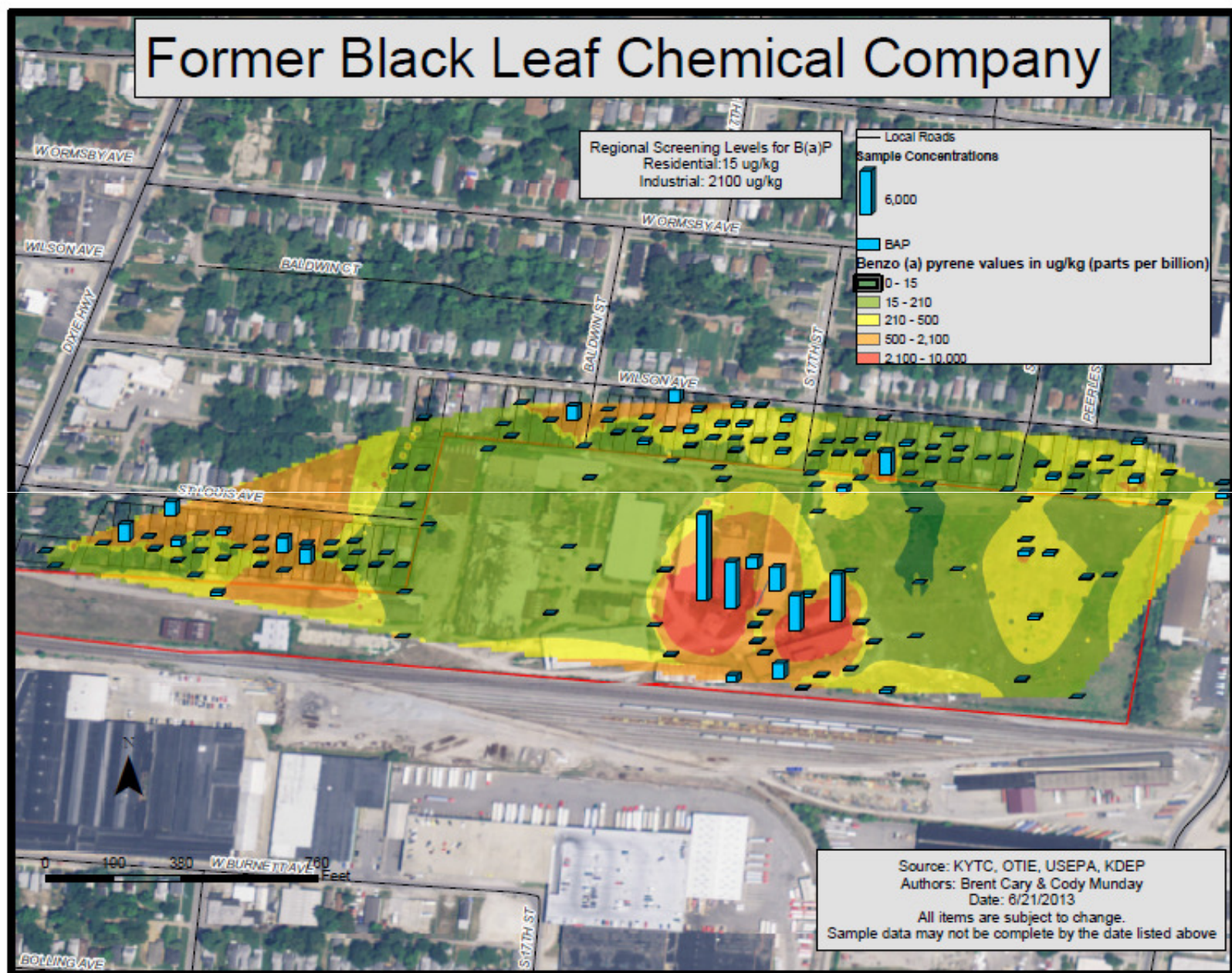
Many of the homes in the areas have coal chutes which indicates that coal was used in the past as a heating source for the homes.

- PAHs were detected at each residential property that was sampled at concentrations over the residential screening level, including the last eight (8) yards that were sampled.

PAH concentrations were generally higher but within an order of magnitude in samples collected on-site than in samples collected in residential yards.



Former Black Leaf Chemical Company



Lead

- Lead found on site may be related to the manufacturing history of the facility.

Lead occurs naturally in soil.

Lead arsenate was a common compound used in pesticide manufacturing in the past.

Similar to PAHs, lead is also a widespread environmental pollutant that is associated with automobile emissions and lead-based paint on house exteriors.

- Lead was detected at nine (9) properties at concentrations that need to be cleaned up.

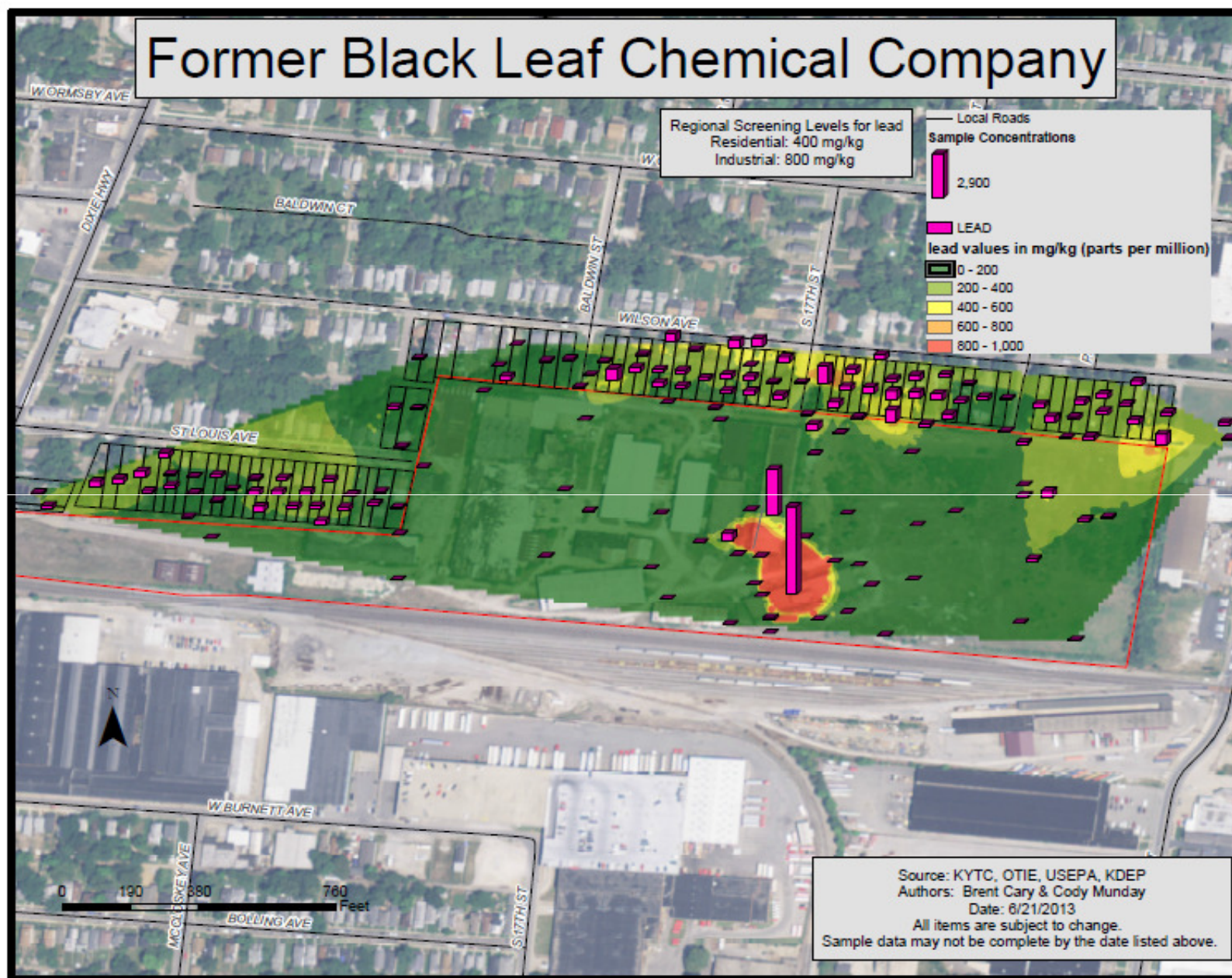
Other than high concentrations in the immediate vicinity of the pesticide manufacturing building, the lead concentrations in residential yards are higher than those found on the Former Black Leaf property.



Division of Waste Management



Former Black Leaf Chemical Company



Former Black Leaf Chemical Company



Source: KGN_USER\ESRI
For: KDEP
Author: Brent Cary
Date: 6/17/2013
All items subject to change

0 250 500 1,000 Feet

Arsenic

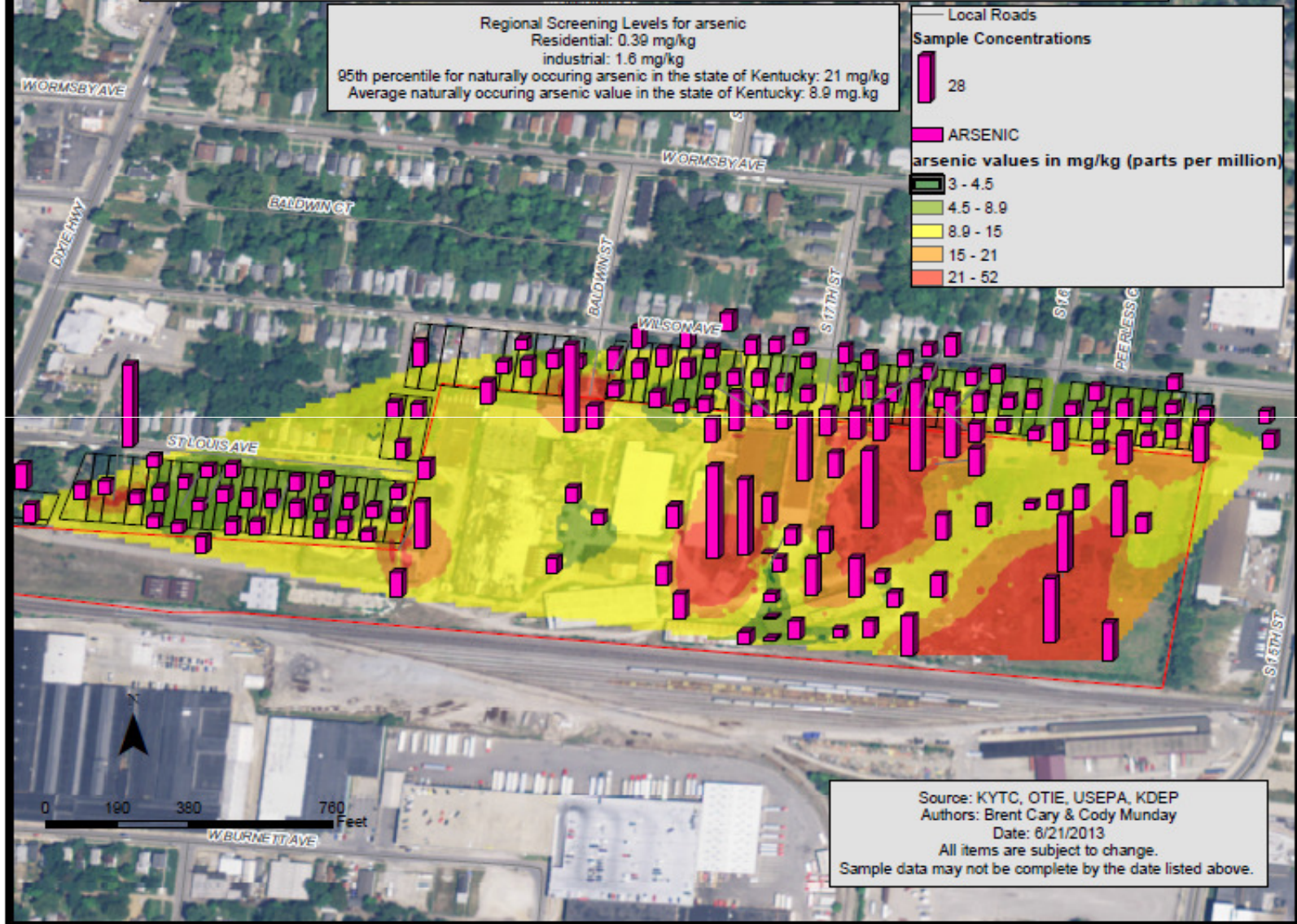
- Arsenic is a naturally occurring element but also was used in pesticide manufacturing.
- Arsenic was detected on one (1) residential property at a concentration that needs to be cleaned up.

Arsenic detected in residential yard samples were generally within the range of the Kentucky background standard with the exception of one location.

Though not significantly, arsenic levels in soil were higher on the Former Black Leaf Chemical property than in the residential yards that were sampled.



Former Black Leaf Chemical Company



Cleanup of Residential Properties Adjacent to the Former Black Leaf Chemical Property

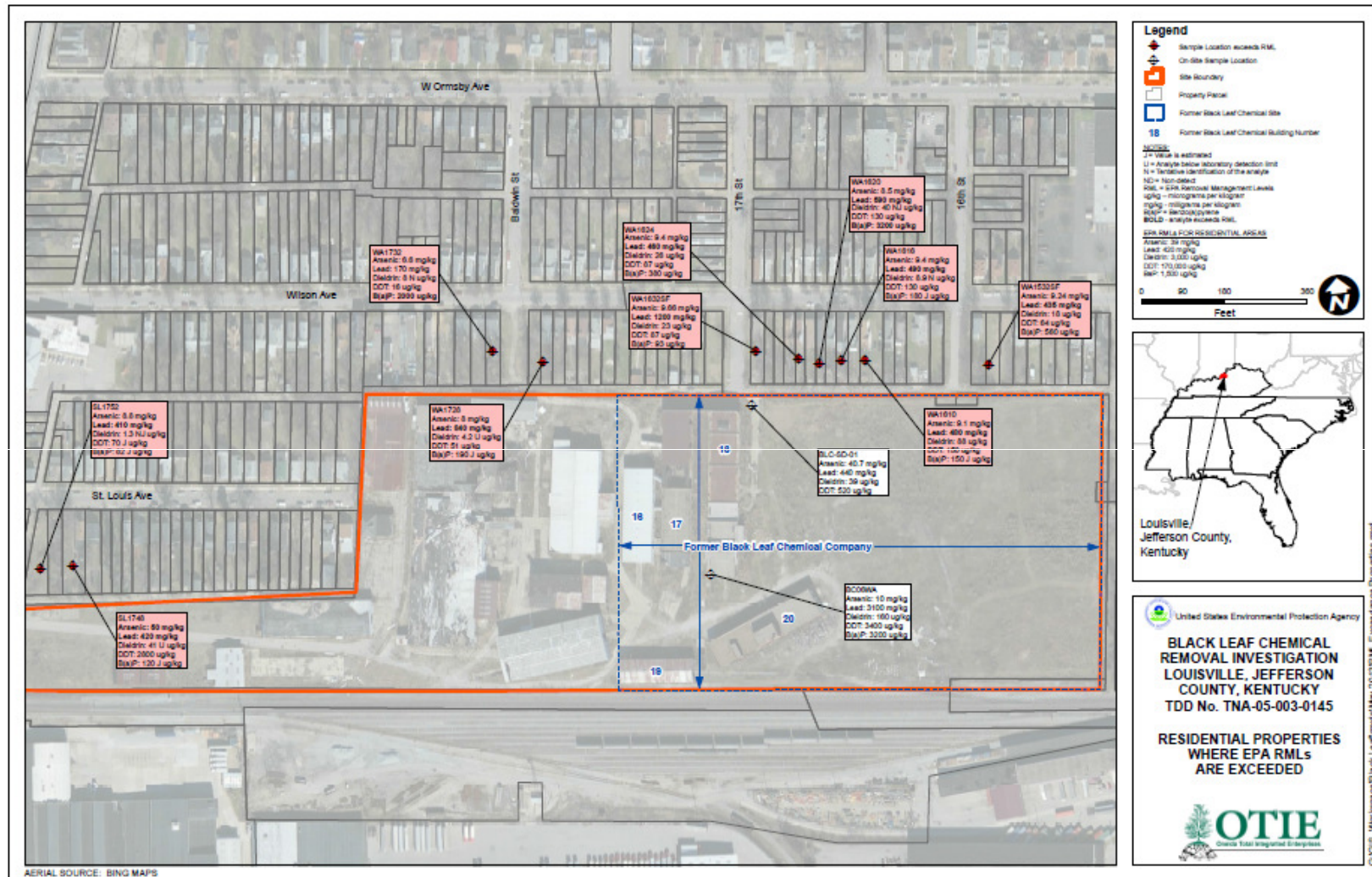
- KDEP and EPA plan to cleanup the soil in the backyards of each of the 77 properties where samples were collected to reduce potential exposure to surface soil. The number of yards cleaned up will depend on getting access.

KDEP and EPA hope to get started with the soil cleanup at the residential properties in early August 2013.

- The first step will be to evaluate silt fencing and check dams to determine if additional measures are needed before beginning cleanup in the residential yards.
- EPA will be doing some soil removal next to the alley that is between the site and Wilson Avenue.



Planned EPA Cleanups



Division of Waste Management



Cleanup of Residential Properties Adjacent to the Former Black Leaf Chemical Property

- Soil will be removed from the upper foot of the backyards and clean soil and sod will be added to the yards. The clean soil and sod will be a barrier to exposure to potential contaminants that may remain.

Soil removal will be completed using machinery and possibly hand tools.

Efforts will be put in place to minimize creating dust during the cleanup.

- Soil will be added back to the yards.

The soil will be tested to make sure it is safe before it is used to backfill in the yards.

- Sod will be installed.

KDEP and EPA will water the sod for three weeks to get it established. After the three weeks, it will be the responsibility of the residents to water the yards.



Projected Cleanup Schedule

- The agencies plan to begin the soil cleanup in early August.
- The total project time for the actual cleanup is projected to be 90 work days depending on weather. The agencies will make every effort to shorten that timeframe.



Division of Waste Management



Large excavator



Division of Waste Management

Small excavator



Division of Waste Management

Access Issues

- EPA and KDEP sent out access agreements to the residents on June 14.
There is a July 5 deadline for access agreements to be received by KDEP. Properties will not be cleaned up without a signed access agreement.
- The access grants the following to KDEP:
 - Excavation and removal of soil and debris
 - Backfilling with clean soil, and grading to promote positive drainage
 - Placement of sod and watering to re-establish ground cover
 - Replacing affected sections of perimeter fencing.
- KDEP is developing an addendum to the access agreement to address site-specific issues including how to handle trees, landscaping and other items in the backyards as part of the cleanup.
- KDEP will provide a voucher or gift card to the residents who grant access to their properties for cleanup in order to address possible loss of gardens by the residents. The voucher will be provided by Grasshopper, a local food distributor.

